

CLAIMS

I claim:

1. An electric powered vehicle, comprising:
 - a chassis defining a battery module compartment; and
 - a battery module insertable into the battery module compartment of the chassis,
2. The electric powered vehicle according to claim 1, wherein the battery module becomes integrated with the chassis upon insertion into the battery module compartment.
3. The electric powered vehicle according to claim 1, further comprising a locking assembly for locking the battery module within the battery module compartment of the chassis.
4. The electric powered vehicle according to claim 3, wherein the locking assembly comprises:
 - a bolt residing within a cavity in the chassis;
 - a biasing member for biasing the bolt to an unlocked position; and
 - an electromagnetic field generator for generating an electromagnetic field that draws the bolt to a locked position within a cavity in the battery module.
5. The electric powered vehicle according to claim 4, wherein the locking assembly further comprises a power contact engaged by the bolt in its locked position to provide an electrical connection among a battery of the battery module, the bolt, and an electric motor of the electric powered vehicle.
6. The electric powered vehicle according to claim 4, wherein the locking assembly further comprises an ignition contact engaged by the electromagnetic field generator to provide an electrical connection among a battery of the battery module, the electromagnetic field generator, and an ignition system of the electric powered vehicle.

7. The electric powered vehicle according to claim 4, wherein the biasing member comprises a natural magnet.

8. The electric powered vehicle according to claim 4, wherein the biasing member comprises a spring.

9. The electric powered vehicle according to claim 4, wherein the electromagnetic field generator comprises a coil.

10. The electric powered vehicle according to claim 1, wherein the battery module comprises:

a battery tray including an ignition contact to provide an electrical connection between the battery tray and an ignition system of the electric powered vehicle; and

a battery insertable into the battery tray, wherein the battery includes an ignition contact to provide an electrical connection between the battery and the battery tray.

11. The electric powered vehicle according to claim 1, further comprising an access door coupled to the chassis, wherein the access door pivots from a closed position over the battery module compartment to an open position exposing the battery module compartment.

12. The electric powered vehicle according to claim 1, wherein the chassis comprises a chassis front and a chassis rear.

13. The electric powered vehicle according to claim 12, wherein the chassis front comprises a cross-member defining a front portion of the battery module compartment.

14. The electric powered vehicle according to claim 13, further comprising a chassis contact attached to the cross-member to provide an electrical connection between a battery of the battery module and an ignition system of the electric powered vehicle.

15. The electric powered vehicle according to claim 12, wherein the chassis rear comprises a cross-member defining a rear portion of the battery module compartment.
16. The electric powered vehicle according to claim 12, wherein the chassis further comprises a support member attached between the chassis front and the chassis rear.
17. The electric powered vehicle according to claim 16, wherein the support member defines a side portion of the battery module compartment.
18. The electric powered vehicle according to claim 16, further comprising a chassis contact attached to the support member to provide an electrical connection between a battery of the battery module and an ignition system of the electric powered vehicle.
19. The electric powered vehicle according to claim 12, wherein the chassis front, the chassis rear, and a body of the electric vehicle are formed integrally in a unibody construction.
20. The electric powered vehicle according to claim 19, wherein a section of the body spanning the chassis front and the chassis rear defines a side portion of the battery module compartment.
21. The electric powered vehicle according to claim 20, further comprising a chassis contact attached to the section of the body spanning the chassis front and the chassis rear to provide an electrical connection between a battery of the battery module and an ignition system of the electric powered vehicle.

22. A method of replacing a battery module of an electric powered vehicle, comprising the steps of:
- providing a service facility for electric powered vehicles;
 - providing the service facility with a plurality of battery modules and a system for charging the battery modules;
 - opening the service facility to drivers owning the electric powered vehicles, whereby a driver having an electric powered vehicle with a depleted battery module enters the service facility;
 - removing the depleted battery module from the electric powered vehicle;
 - inserting a fully charged battery module into the electric powered vehicle; and
 - charging the driver for the fully charged battery module.
23. The method according to claim 22, wherein the electric powered vehicle comprises:
- a chassis defining a battery module compartment, and
 - a battery module insertable into the battery module compartment of the chassis.
24. The method according to claim 23, wherein the step of removing the depleted battery module from the electric powered vehicle comprises the steps of:
- opening an access door attached to the chassis to expose the battery module compartment; and
 - sliding the depleted battery module from within the battery module compartment.

25. The method according to claim 24, wherein the step of inserting a fully charged battery module into the electric powered vehicle comprises the step of:

sliding the battery module including a fully charged battery into the battery module compartment; and

closing the access door attached to the chassis to seal the battery module compartment.

26. The method according to claim 22, further comprising the step of recharging the depleted battery module.